Published in final edited form as:

J Subst Use. 2014 June 1; 19(3): 225–228. doi:10.3109/14659891.2013.779756.

The potential utility of drinking motive questions to screen at-risk drinking in socially anxious patients

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Abstract

Background—Drinking motives are thought to be important mediators of the relationship between social anxiety and alcohol use. This project evaluates whether specific drinking motives accurately reflect alcohol dependence. If so, brief questions about drinking motives could serve as valuable alcohol screening tools with socially anxious patients.

Methods—This investigation was a secondary analysis of an existing data set of 83 subjects with social anxiety disorder and at-risk alcohol use. The relationship between Drinking Motives Questionnaire (DMQ-R-5) subscales and alcohol dependence was evaluated.

Results—Coping-Depression was the only subscale that contributed to the unique prediction of a diagnosis of alcohol dependence. Additionally, two items (i.e. “to cheer up when you’re in a bad mood” and “to forget painful memories”) predicted a diagnosis of alcohol dependence above and beyond their association with each other.

Conclusions—Among patients with social anxiety, two specific questions on the DMQ-R-5 could provide a useful screen for health professionals to predict alcohol dependence. It may be fruitful to specifically target the motives of “to cheer up when you’re in a bad mood” and “to forget painful memories” when providing advice during brief interventions.

Keywords

Social anxiety; drinking motives; alcohol screening

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Declaration/Conflict of Interest Statement

The authors declare that this material has not been published elsewhere and that the paper is not currently being considered for publication elsewhere. All authors have been personally and substantially involved in the work leading to the paper, and hold themselves jointly and individually responsible for its content. Relevant ethical safeguards have been met in relation to the confidentiality and consent of the participants involved in the research. The Institutional Review Board (IRB) of the Medical University of South Carolina approved the research protocol upon which this secondary analysis was based. All participants were treated ethically.

Each author declares that he/she has no conflicts of interest relevant to the contents of the article or any financial or personal relationships with other people or organizations that could inappropriately influence (bias) their work. No outside medical writing/editorial assistance was obtained in the preparation of this manuscript.

INTRODUCTION

A high co-occurrence exists between social anxiety disorder (SAD) and both hazardous drinking and alcohol use disorders (Grant et al, 2004; Schneier et al, 2010). Socially anxious individuals are twice as likely to have an alcohol use disorder than those without this condition (Kushner et al, 2000). The co-morbidity of alcohol dependence and SAD is especially significant in that it results in greater social, emotional and physical impairment than either diagnosis alone (Buckner et al, 2008; Liang & Chikritzhs, 2011). In the majority of cases, SAD precedes the onset of alcohol dependence and may be a significant risk factor for its development (Buckner et al, 2008).

Evidence suggests that drinking motives serve as important mediators of this relationship (Cooper et al, 1995). Four distinct drinking motives including social, enhancement, coping, and conformity have been proposed and are assessed using the Drinking Motives Questionnaire (DMQ), a validated, self-report instrument (Cooper, 1994). Social and enhancement motives, representing positive reinforcement motives, refer to the consumption of alcohol to obtain positive social rewards and to enhance mood, respectively. Negative reinforcement motives include coping and conformity. Coping motives involve drinking to reduce negative affect, while conformity motives refer to drinking to avoid social censure or disapproval.

Coping motives increase risk for first time occurrence of alcohol dependence one year and 10 years later in adult drinkers (Beseler et al, 2011; Carpenter & Hasin, 1998). Taken together, drinking to cope with negative affect appears to have an etiological role in the development of alcohol dependence (Carpenter & Hasin, 1998). For those with SAD, similar relationships are evident in that coping motives have been shown to mediate the relationship between social anxiety and problem drinking (e.g., Windle & Windle, 2012).

More recently, Blackwell and Conrod (2003) subdivided the coping motive to include coping-depression and coping-anxiety since each of these factors is associated with different risks and different alcohol drinking patterns. Only recently have studies focused on the distinction between coping-anxiety and coping-depression and found that, although correlated with one another, each contributes distinctly to the prediction of alcohol problems (Grant et al, 2007). For example, coping-depression and not coping-anxiety predicts alcohol-related problems. Only when controlling for drinking levels does coping-anxiety predict alcohol-related problems.

Given the current emphasis on alcohol screening and brief interventions by mental health professionals and primary care providers (National Institute on Alcohol Abuse and Alcoholism, 2007), further delineation of the relationship between SAD, drinking motives, and alcohol dependence could have implications for prevention and treatment in psychiatric and medical settings, especially in patients with known social anxiety disorder. In addition to alcohol screening questions, information about drinking motives could inform brief interventions for patients who are either at-risk for alcohol dependence or currently alcohol dependent. In this regard, the current study was designed to answer the following questions:

1. Which drinking motives (coping-anxiety, coping-depression, enhancement, social, conformity) are most associated with alcohol dependence in socially anxious patients?
2. What specific question or questions on the DMQ-R-5 best predict alcohol dependence?

METHOD

Participants

A total of 83 subjects were included in the analysis. All participants were subjects who were randomized for an intervention study on the treatment of SAD and heavy alcohol use. Subjects were recruited by the Medical University of South Carolina (MUSC) in Charleston, South Carolina and the University of Minnesota (UM) in Minneapolis, Minnesota. Recruitment was targeted toward local communities via local newspapers, flyers, and an online consumer site (i.e., Craigslist). All subjects signed a detailed IRB-approved consent form.

Participants were between the ages of 18 and 65 years, were seeking treatment for social anxiety disorder (SAD), met criteria for SAD by structured clinical interview, and met criteria for at-risk drinking determined by National Institute on Alcohol and Alcohol Abuse (NIAAA) guidelines. Exclusion criteria included drug dependence in the past 90 days, lifetime diagnosis of schizophrenia or bipolar disorder, significant suicide risk, current use of psychotropic drugs, and pregnancy, nursing or refusal to use effective birth control, if female. A total of 123 subjects met criteria and 83 reached randomization, and their baseline data were included in the final data analysis. Table 1 illustrates demographic variables on the sample, with no significant differences on any of these variables between the alcohol dependent and non-dependent groups.

Measures

Measures relevant to this secondary analysis are as follows:

Structured Clinical Interview for DSM-IV (SCID)—The SCID is a face-to-face clinical interview providing Axis I psychiatric diagnoses according to DSM-IV criteria. This instrument was used to assess for SAD and alcohol dependence, as well as exclusionary psychiatric conditions, and was administered by an experienced psychiatrist.

Drinking Motives Questionnaire –R-5 (DMQ-R-5)—The DMQ-R-5 is a 28-item questionnaire measuring 5 drinking motives: social, enhancement, coping-depression, coping-anxiety, and conformity (Grant, et. al, 2007). It represents a modified version of an earlier drinking motives questionnaire developed by Cooper (1994). A list of reasons for drinking is provided, and subjects rate each item, based on their drinking frequency for each reason, on a 5-point Likert scale ranging from almost never to almost always/always. Each subscale is scored as the mean of its component items.

Beck Depression Inventory (BDI)—The BDI is a standard 21-item self-rating instrument to assess for depression (Beck et al, 1996). It has good internal consistency and test-retest reliability. Higher scores indicate more severe depression.

Procedure

The present study represents a secondary analysis of data from an intervention study on the phased treatment of social anxiety and at-risk alcohol use behaviors in a medical setting. This was an open label study in which, after initial evaluation, paroxetine (up to 60 mg per day) was given to all participants, with subjects randomized to receive either an alcohol brief intervention or no alcohol intervention after six weeks of paroxetine treatment. The current analysis was based on initial baseline data (prior to paroxetine administration) of the 83 subjects who were randomized.

DATA ANALYSIS

All analyses were conducted with simple or multiple logistic regression. We first examined simple regressions of dependence on each of the DMQ scales separately. To determine which scales predicted dependence above and beyond the other scales, we entered all scales into a multiple logistic regression. Within the significant scales, a second set of logistic regressions was performed with a similar strategy to that used for the overall scale totals. Depression was analyzed as a possible moderator of the DMQ-Dependence relationship on the DMQ variables using the interaction of these variables with the DMQ slope.

RESULTS

Each DMQ scale showed good internal consistency with Cronbach's alpha ranging from .72 to .91.

All DMQ subscales except conformity and coping-anxiety were significantly associated with the probability of alcohol dependence. However, when entered together in a multiple logistic regression, only coping-depression remained significant ($p=.0009$), i.e. other scales predict dependence only by virtue of their correlation with coping-depression. The latter is the only subscale that contributes uniquely to the regression. This subscale also had, by far, the strongest association with dependence when evaluated in the simple regression ($p=.00008$).

An examination of individual questions comprising the coping-depression scale revealed a strong, significant relationship with alcohol dependence for all questions. In a full multiple regression only questions 14 ("to cheer up when you're in a bad mood") and 27 ("to forget painful memories") were significantly associated with alcohol dependence ($p=.037$ and $.017$, respectively), suggesting that most questions predict dependence by shared variance with the other predictors. A model with question 14 and 27 alone was highly significant ($p=.000006$) and, interestingly, both questions remain significant ($p=.035$ and $p=.007$, respectively).

The relationship of the DMQ scales to dependence is relatively insensitive to severity of depression (i.e., no moderating effect), as reflected in Beck Depression Inventory scores when either entered as a binary variable (median split) or as quartiles. Coping-depression

had an $r = .058$ interaction with the binary Beck Depression Inventory variable. No interactions approach significance using quartiles of BDI as the predictor. The main effect of depression failed to approach significance for either the binary or quartile predictor.

DISCUSSION

The Coping-Depression subscale of the DMQ was the only subscale that contributed uniquely to the probability of alcohol dependence in individuals with SAD. There was a strong interaction between the Coping Depression subscale and depression on the Beck Depression Inventory. Indeed, there is strong co-morbidity between SAD and depression (Sanderson, et. al, 1990), with social anxiety also being associated with low positive affect (Brown et al, 1998) and blunted hedonic experiences (Kashdan, 2004).

While most questions on the coping depression subscale predicted alcohol dependence on the basis of shared variance with other items, only Question 14 (“to cheer up when you’re in a bad mood”) and Question 27 (“to forget painful memories”) predicted unique variance with alcohol dependence.

As part of screening and brief intervention for alcohol dependence, motives associated with alcohol dependence could be targeted for intervention. Preliminary evidence with college students suggests that decreases in drinking as a result of brief interventions are more likely when they include discussions of drinking motives and/or alcohol expectancies (Carey et al, 2007). Thus, it is possible that incorporating drinking motives into brief interventions by either mental health professionals or primary care providers might enhance the potency of the intervention with SAD patients.

Questions 14 and 27 could provide a time-efficient way to screen socially anxious drinkers for possible alcohol dependence and to allow physicians to focus their brief interventions on specific motives for drinking rather than simply providing generic advice to reduce alcohol consumption. For example, clinicians could hone in on drinking “to cheer up when you are in a bad mood” or “to forget painful memories” to provide a more patient-specific discussion and then to discuss alternative ways the patient could overcome negative mood states.

Certain limitations of this study should be noted. This was a secondary analysis with a fairly small sample and findings should be considered preliminary. However, our use of a community-based sample with an average age of 32 and including both men and women is noteworthy in that most studies of SAD recruit mostly women college students. Thus, our findings, although not comparable to college student studies, might be more clinically relevant.

Future research should focus on whether including questions 14 and 27 in clinical settings helps to identify alcohol use disorders in SAD patients and whether using this information to inform brief interventions is more likely to produce changes in drinking and/or the increased likelihood of seeking professional assistance and/or attending self-help groups. In addition, providing the heavy drinking, non-dependent patients with feedback regarding risks for

dependence associated with these specific motives may be especially helpful toward enhancing patient motivation to initiate change.

CONCLUSIONS

Among patients with social anxiety, questions 14 and 27 on the DMQ-R-5 could be a useful screen for health professionals to predict severity of alcohol related problems. It may also be fruitful to specifically target the motives of “to cheer up when you’re in a bad mood” and “to forget painful memories” when providing advice during brief interventions.

Acknowledgments

This study was funded by the National Institute on Alcohol Abuse and Alcoholism (NIAAA) through grant numbers R01AA013379.

This study was funded by the National Institute on Alcohol Abuse and Alcoholism (NIAAA) through grant numbers P50AA010761 and R01AA017420.

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Table 1

Age, Gender, Race, and Education Demographics for Alcohol Dependent and Non-Alcohol Dependent Participants

	ALCOHOL DEPENDENT (n = 32)	NON-ALCOHOL DEPENDENT (n = 51)
Mean Age (sd)	32 (11.84)	31 (9.73)
Gender (% female)	56.3%	39.2%
Race (% Caucasian)	68.8%	80.4%
Education:		
Less than high school	3.1%	5.9%
High school grad/GED	9.4%	7.8%
Some college	50%	43.1%
College grad/grad degree	37.5%	43.2%